

## Amendments to the Claims:

Claim 1 (Currently amended). A method of reducing the effects of defeating copy protection signals in one or more selected video lines of a video signal being supplied to a recorder ~~VCR and/or television (TV)~~ TV set, wherein the copy protection signals include sync and/or pseudo sync pulses together with respective automatic gain control (AGC) and AGC pulses, with the sync/pseudo AGC pulses having a given small position separation, which can be including zero separation, from the respective AGC sync/pseudo sync pulses, comprising:

providing the sync/pseudo sync AGC pulses with the trailing leading edge thereof having the small position separation from the leading trailing edge of respective AGC sync/pseudo sync pulses, wherein the small position separation maintains the copy protection effect; and

22 shifting the relative position of either the trailing leading edge of the sync/pseudo sync AGC pulses or the leading trailing edge of the respective AGC sync/pseudo sync pulses with respect to each other, or shifting the relative positions of the trailing edge of the sync/pseudo sync pulses and the leading edge of the respective AGC pulses, to provide a modified further position separation between the trailing edge of the sync/pseudo sync pulses and the leading edge of the respective AGC pulses ~~therebetween~~ sufficient to reduce the effects of the copy protection signals ~~in the VCR and/or TV set and allow the recording of a viewable copy.~~

Claim 2 (Currently amended). The method of claim 1 including:

delaying the leading edge of the AGC pulses relative to the trailing edge of the respective sync/pseudo sync pulses by a time period commensurate with said modified further position separation.

Claim 3 (Currently amended). The method of claim 2 wherein the delay is in the region of about 1.0 to about 2.5 microseconds ~~depending upon the amount of the small position separation, and provides said further position separation of about 1.5 or more microseconds.~~

Claim 4 (Currently amended). The method of claim 1 including:  
advancing the trailing edge of the sync/pseudo sync pulses relative to the leading edge of the respective AGC pulses by a time period commensurate with said modified ~~further~~ position separation.

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Claim 5 (Currently amended). The method of claim 4 wherein the advancement is in the region of about 1.0 to about 2.5 microseconds ~~depending upon the amount of the small position separation, and provides said further position separation of about 1.5 or more microseconds.~~

Claim 6 (Currently amended). The method of claim 1 including:  
delaying the AGC pulses in the region of ~~by about 0.5 to about 1.5 microseconds~~ relative to respective sync/pseudo sync pulses, while advancing the trailing edge of the sync/pseudo sync pulses in the region of ~~about 0.5 to about 1.5 microseconds~~ relative to the delayed respective AGC pulses to obtain said modified position separation.

Claim 7 (Currently amended). The method of claim 1 including:  
narrowing the durations of the sync/pseudo sync pulses and/or the respective AGC pulses, in combination with the shifting of the relative positions of the sync/pseudo sync and respective AGC pulses.

Claim 8 (Currently amended). The method of claim 1 wherein the video level of said modified further position separation is at a video level in the region of ~~about~~ blanking level.

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Claim 9 (Currently amended). The method of claim 1 including:  
delaying the AGC pulse relative to the respective sync/pseudo sync pulse to provide a modified said further position separation that partially almost defeats the effects of the copy protection signals; and

narrowing the AGC pulse an amount sufficient to defeat or substantially reduce the effects of the copy protection signals.

Claim 10 (Currently amended). The method of claim 1 including:  
advancing the trailing edge of the sync/pseudo sync pulses ~~pulse's trailing edge~~ to provide a narrowed sync/pseudo sync signal;  
delaying the leading edge of the respective AGC pulses ~~pulse's leading edge~~ to provide a narrowed AGC pulse; and  
wherein the resulting modified further position separation between the sync/pseudo sync pulses and respective AGC pulses is sufficient to reduce the effects of the copy protection signals.

Claim 11 (Currently amended). The method of claim 1 including:  
delaying the position of the AGC pulse;  
advancing the trailing edge of the sync/pseudo sync pulses ~~pulse's trailing edge~~ to narrow  
the sync/pseudo sync pulse; and  
wherein the resulting modified ~~further~~ position separation between the sync/pseudo sync  
pulses and the respective AGC pulses is sufficient to reduce the effects of the copy protection  
signals.

Q2  
Claim 12 (Currently amended). The method of claim 1 including:  
removing all or sufficient portions of the copy protection signals of sync/pseudo sync  
and/or respective AGC pulses;  
inserting new sync/pseudo sync pulses in advance of the position of the original  
sync/pseudo sync pulses that are removed; and/or  
inserting new AGC pulses in delayed relation to the position of the original AGC pulses;  
thereby providing said modified ~~further~~ position separation sufficient to reduce the  
effects of the copy protection signals.

Claim 13 (Currently amended). The method of claim 1 including:  
providing the ~~AGC pulses with the~~ small position separation between ~~with respect to~~  
~~respective~~ normal sync pulses and respective AGC pulses; and  
position modulating the AGC pulses while maintaining said modified ~~further~~ position  
separation between the ~~AGC and~~ normal sync pulses and the respective AGC pulses which  
reduces the effects of the copy protection signals.

Q2  
Claim 14 (Currently amended). The method of claim 1 wherein the step of shifting  
includes:  
reversing the order of at least portions of the sync/pseudo sync pulses and respective  
AGC pulses while maintaining said modified ~~further~~ position separation.

Claim 15 (Currently amended). The method of claim 1 wherein the step of shifting  
includes:  
phase shifting at least portions of the sync/pseudo sync pulses and the respective AGC  
pulses ~~to about~~ 180 degrees.

Claim 16 (Currently amended). Apparatus for reducing the effects of ~~defeating~~ copy  
protection signals in one or more selected video lines of a video signal being supplied to a  
recorder VCR and/or television (TV) set, wherein the copy protection signals include sync and/or  
pseudo sync pulses together with respective automatic gain control (AGC) and ~~AGC~~ pulses, with  
the sync/pseudo sync ~~AGC~~ pulses having a given small position separation, which can be  
~~including~~ zero separation, from the respective AGC ~~sync and/or pseudo sync~~ pulses, comprising:

an input ~~means for~~ supplying the copy protected video signal with the trailing edge of the sync or pseudo sync AGC pulses and the leading edge of the respective AGC sync/pseudo-sync pulses ~~having with~~ the given small position separation which maintains the copy protection effect;

timing circuitry responsive to the input and for providing timing signals coincident with one or more portions of the copy protection signals and indicative of one or more video lines containing sync/pseudo sync and respective AGC pulses; and

22 a modifying circuit ~~means~~ responsive to the timing circuitry and for shifting a position of the sync/pseudo sync pulses or the relative edges and/or positions of the respective AGC pulses on said line and of the sync/pseudo-sync pulses with respect to each other so as to provide a modified further position separation between the trailing edge of the sync or pseudo sync pulses and the leading edge of respective AGC pulses there-between which is of sufficient position separation to reduce or defeat the effects of the copy protection signals ~~in the VCR and/or TV set~~ and ~~allow the recording of a viewable copy of the video signal.~~

Claim 17 (Currently amended). The apparatus of claim 16 wherein:

the timing circuitry includes a sync separating circuit and provides ~~means for~~ providing selected sync signals; and

a timing circuit responsive to the sync separating circuit and which provides ~~means for~~ ~~providing~~ the timing signals;

wherein the modifying circuit means includes a delay circuit which delays one or more portion of ~~means for~~ ~~delaying~~ the copy protected video signal; and

~~a clipper circuit responsive to the delay means for supplying delayed AGC pulses; and~~

wherein the apparatus further includes a including switching circuit which inserts means  
~~for inserting~~ the delayed AGC pulses into the copy protected video signal in response to the  
timing signals.

Claim 18 (Currently amended). The apparatus of claim 16 wherein:

the timing circuitry includes a sync separating circuit which provide means for providing  
selected sync signals; and

a timing circuit responsive to the sync separating circuit to provide means for providing  
the timing signals;

~~the circuit means include multivibrator means responsive to the sync separating means  
for providing a defeat signal which causes said further position separation; and~~

wherein the modifying circuit includes a logic circuit means responsive to the timing  
circuit to provide ~~and multivibrator means for providing~~ a control signal indicative of the  
presence of the copy protection signals and of said modified ~~further~~ position separation; and

a switching circuit means receiving the copy protected video signal for inserting the  
pulses having the modified position separation ~~said defeat signal~~ into the copy protected video  
signal in response to the control signal, to modify the widths of the sync/pseudo sync pulses  
and/or the respective AGC pulses.

Claim 19 (Currently amended). The apparatus of claim ~~18~~ 16 further comprising including:

a chroma filter receiving the copy protected video signal and which inserts ~~for reinserting~~ color burst into the ~~unprotected~~ video signal ~~via the switching means in response to the control signal, during the modifying of the pulses' widths.~~

Claim 20 (Currently amended). Apparatus for reducing the effects of copy protection signals of a video signal being supplied to a recorder or television set. ~~The apparatus of claim 16~~ wherein the copy protection signals include sync/pseudo sync and respective automatic gain control (AGC) AGC pulse pairs comprising, ~~wherein:~~

an input supplying the copy protected video signal with the sync/pseudo sync pulses and the respective AGC pulses;

timing circuitry responsive to the input and providing timing signals coincident with one or more portions of the copy protection signals; and

~~the timing circuitry includes control means for supplying write and read signals; and~~

a modifying the circuit for modifying means include memory means receiving the copy protected video signal in response to the write signal, wherein the one or more portion of the modified stored copy protection protected video signal is altered recovered from the memory means in reverse order in response to the timing read signals to provide altered reversed pulse pairs having said small position separation between the sync/pseudo sync and AGC pulses which defeat or reduces the effect of the copy protection signals.



Claim 21 (Currently amended). The apparatus of claim 20 wherein the copy protected video signal reversing process is implemented for all or selected portions of all or a selected plurality of the sync/pseudo sync pulses and/or respective AGC pulses.

Claim 22 (Currently amended). Apparatus for reducing the effects of copy protection signals of a video signal being supplied to a recorder or television set, The apparatus of claim 16 wherein the copy protection signals include sync/pseudo sync and respective automatic gain control (AGC) pulse pairs, comprising:

A<sup>2</sup>  
an input supplying the copy protected video signal having the sync/pseudo sync pulses and the respective AGC pulses which maintain the copy protection effect;

timing circuitry responsive to the input and providing timing signals coincident with one or more portion of the copy protection signals;

~~wherein the timing circuitry includes a source of control voltage;~~

a modifying the circuit means including an include inverting amplifier/phase shifter circuit means receiving the copy protected video signal and responsive thereto to provide for providing inverted/phase shifted sync/pseudo sync pulses and respective AGC pulses to modify one or more portion of signals; and dissolve amplifier means responsive to the control voltage for replacing the original sync/pseudo sync and respective AGC pulses with the inverted/phase shifted sync/pseudo sync and AGC pulses.

Claim 23 (Currently amended). The apparatus of claim 22 including:

a second source of a second control voltage;

level shifter/attenuator circuit receiving the output of the modifying circuit ~~dissolve~~  
~~amplifier means~~ and responsive to the second control voltage for level shifting/attenuating the  
inverted/phase shifted sync/pseudo sync pulses and respective AGC pulses.

Claim 24 (Currently amended). A method of synthesizing ~~providing~~ copy protection  
signals in a video signal, employing sync and/or pseudo sync pulses followed by respective  
automatic gain control (AGC) ~~AGC~~ pulses, comprising:

a<sup>2</sup>  
providing the sync or pseudo sync AGC pulses with the trailing ~~leading~~ edges thereof  
generally coincident with the leading ~~trailing~~ edges of respective AGC ~~sync/pseudo sync~~ pulses  
thereby having essentially small to zero position separation consistent with maintaining copy  
protection;

dynamically increasing over time the position separation between the sync/pseudo sync  
pulses and the respective AGC pulses so as to reduce or defeat the effects of the copy protection  
signals; and

dynamically decreasing over time the position separation between the sync/pseudo sync  
pulses and the respective AGC pulses to return to the essentially small to zero position separation  
to maintain copy protection.

Claim 25 (Currently amended). The method of claim 24 including:

dynamically varying the position separation between at least one sync/pseudo sync pulse  
and at least one respective AGC pulse from the essentially small to zero position separation to a  
position separation in the region of ~~about~~ 1.5 to ~~about~~ 5.0 microseconds.

Claim 26 (Original). The method of claim 24 including:  
dynamically varying the position separation by dynamically varying the advancement of the trailing edge of the sync/pseudo sync pulses with respect to the respective AGC pulses.

Claim 27 (Original). The method of claim 24 including:  
dynamically varying the position separation by dynamically varying the delay of the leading edge of the AGC pulses with respect to the respective sync/pseudo sync pulses.

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Claim 28 (Currently amended). The method of claim 24 including:  
dynamically varying the position separation by dynamically varying the advancement of the sync/pseudo sync pulses while dynamically varying ~~oppositely~~ the delay of the respective AGC pulses.

Claim 29 (Currently amended). The method of claim 24 including:  
dynamically varying the position separation by dynamically varying the pulse width or the pulse width duration of the AGC pulses and/or of the sync/pseudo sync pulses.

Claim 30 (Currently amended). The method of claim 24 including:  
dynamically narrowing any portion or all ~~the pulse width~~ of the AGC pulses and/or the sync/pseudo sync pulses ~~from 100 percent to about 50 percent and back to 100 percent.~~

Claim 31 (Currently amended). Apparatus for ~~synthesizing~~ providing copy protection signals in a video signal employing sync and/or pseudo sync pulses followed by respective automatic gain control (AGC) AGC pulses, comprising:

timing circuitry receiving the video signal and which provides ~~for providing~~ timing signals indicative of video lines which are to contain the copy protection signals, and of the location in the video lines of selected copy protection signals;

*az*  
a generating circuit to generate selectively derived and ~~means responsive to the timing circuitry for generating~~ modulated ~~inverted~~ pseudo sync pulses, which are modulated in response to the timing circuitry, and which generate ~~for generating~~ AGC pulses that vary in width and/or position ~~delay~~ in response to the respective selectively derived and modulated ~~inverted~~ pseudo sync pulses; and

a summing/inserting circuit ~~means~~ receiving the video signal and responsive to the generating circuit ~~means~~ and the timing circuitry to add or insert ~~for adding~~ to the video signal a dynamic copy protection signal formed of the pseudo sync pulses and the respective width and/or position modulated AGC pulses ~~relative to the pseudo sync pulses~~.

Claim 32 (Currently amended). The apparatus of claim 31 wherein:

the timing circuitry includes a sync separating circuit to provide ~~means for providing~~ a horizontal rate (H rate) signal ~~and a frame rate signal~~;

a first circuit ~~means~~ responsive to the H rate signal to provide ~~for providing~~ a first signal which defines a positive pulse duration of an H rate related signal;

a timing generator ~~multivibrator means~~ responsive to the H rate signal and which provides ~~for providing~~ a second signal indicative of the location of sync pulses in a video line;

a line circuit means responsive to the H rate and frame-rate signals to provide for  
~~providing~~ a third signal indicative of the video lines which are to contain the copy protection  
signals; and

a logic circuit means responsive to the first, second and third signals to provide for  
~~providing~~ inverted pseudo sync pulses on selected video lines;

wherein the generating circuit means includes a ~~one-shot~~ timer circuit means responsive  
to control voltages to provide for ~~providing~~ said AGC pulses that are varying in width and in  
position ~~delay~~; and

the summing/inserting circuit means includes a summing amplifier means receiving the  
video signal and responsive to said selectively derived ~~inverted~~ pseudo sync pulses and said  
width and position ~~delay~~ varying AGC pulses, wherein the summing/inserting circuit provides  
~~for providing~~ the position modulated AGC pulses in combination with ~~relative to~~ the derived  
pseudo sync pulses, resulting in a dynamically varying copy protected video signal.

Claim 33 (Currently amended). The apparatus of claim 32 wherein:

said first circuit means ~~for providing the first signal~~ includes an H locked oscillator  
responsive to the H rate signal;

said line circuit means ~~for providing the third signal~~ includes a memory means responsive  
to a line counter;

said ~~one-shot~~ timer circuit means includes a pair of voltage controlled ~~one-shot~~ circuits;  
and

said summing amplifier ~~means~~ includes first and second summing amplifiers responsive to said derived pseudo sync pulses and said respective width and position delay varying AGC pulses ~~and said inverted pseudo sync pulses, respectively.~~

Claim 34 (Currently amended). Apparatus for synthesizing copy protection signals in a video signal employing sync and/or pseudo sync pulses followed by respective automatic gain control (AGC) pulses, comprising: ~~The apparatus of claim 31 wherein:~~

*a<sup>2</sup>* a generating ~~said~~ circuit for providing means generate the respective AGC pulses within at least a portion of a ~~as raised~~ back porch AGC pulses; and

wherein said generating circuit means dynamically positions and/or width modulates the respective ~~raised~~ back porch AGC pulses over time from minimum to maximum separation and back to minimum separation, with respect to the sync/pseudo sync pulses.

Claim 35 (Currently amended). The apparatus of claim 31 wherein:

the copy protection signals include sync, pseudo sync, AGC and/or raised back porch AGC pulses; and

said generating circuit provides means cause dynamic position, pulse width and/or gap width modulation of the pulses ~~over time from maximum to minimum gap separation.~~

Claim 36 (Currently amended). A method of providing copy protection signals in a video signal and for reducing the effects or effectiveness of defeating the copy protection signals when desired, wherein the copy protection signals include sync and/or pseudo sync pulses and respective automatic gain control (AGC) AGC pulses, comprising:

providing the sync/pseudo sync AGC pulses with the trailing leading edges thereof coincident with, or separated by less than 1.0 microsecond from, the leading trailing edges of respective AGC sync/pseudo-syne pulses to provide the copy protection signals; and

position separating relative to time the sync/pseudo sync AGC pulses relative to and/or the respective AGC sync/pseudo-syne pulses an amount of 1.5 or more microseconds sufficient to provide the reduction in the effects or effectiveness ~~defeat the copy protection effect~~ of the copy protection signals.

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Claim 37 (New). The method of claim 1 wherein the modified position separation caused by the shifted positions of the sync/pseudo sync pulses relative to the respective AGC pulses provides the reduction in the effects of the copy protection signals in the recorder or TV set which may include allowing a recording of a viewable copy of the video signal.

Claim 38 (New). The apparatus of claim 16 wherein the modified position separation provided by the modifying circuit causes the reduction in the effects of the copy protection signals in the recorder or TV set which may include allowing a recording of a viewable copy of the video signal.

Claim 39 (New). A method of reducing the effects or effectiveness of copy protection signals in one or more selected video lines of a video signal being supplied to a recorder or television (TV) set, wherein the copy protection signals include negative going pulses and respective positive going pulses, with the negative going pulses having a given small position separation, which may be zero separation, from the respective positive going pulses, comprising:

providing the negative going pulses with the trailing edge thereof having the small position separation from the leading edge of respective positive going pulses, wherein the small position separation maintains the copy protection effect; and

shifting the relative position of either the trailing edge of the negative going pulses or the leading edge of the respective positive going pulses with respect to each other, or shifting the relative positions of the trailing edge of the negative going pulses and the leading edge of the respective positive going pulses, to provide a modified position separation between the trailing edge of the negative going pulses and the leading edge of the respective positive going pulses sufficient to reduce the effects of the copy protection signals.

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Claim 40 (New). Apparatus for reducing the effects or effectiveness of copy protection signals in one or more selected video lines of a video signal being supplied to a recorder or television (TV) set, wherein the copy protection signals include negative going pulses and respective positive going pulses, with the negative going pulses having a given small position separation, which may be zero separation, from the respective positive going pulses, comprising:

an input supplying the copy protected video signal with the trailing edge of the negative going pulses and the leading edge of the respective positive going pulses having the given small position separation which maintains the copy protection effect;

timing circuitry responsive to the input means and providing timing signals coincident with one or more portions of the copy protection signals and indicative of one or more video lines containing the negative going pulses and the respective positive going pulses; and

a modifying circuit responsive to the timing circuitry and shifting the relative edges and/or positions of the negative going pulses and of the respective positive going pulses with



respect to each other so as to provide a modified position separation between the trailing edge of the negative going pulses and the leading edge of the positive going pulses which is of sufficient position separation to reduce or defeat the effects of the copy protection signals.

Claim 41 (New). The method of claim 1 wherein the AGC pulses are raised back porch AGC pulses which are position modulated.

Claim 42 (New). The method of claim 30 wherein the pulse width of the sync/pseudo sync and/or AGC pulses are narrowed in the region of 100 percent to 50 percent.

a<sub>2</sub>  
Claim 43 (New). The method of claim 24 wherein only the AGC pulses are shifted in position continuously or discretely.

Claim 44 (New). The method of claim 24 further comprising:  
dynamically amplitude modulating the sync, pseudo sync and/or the AGC pulses.

Claim 45 (New). The method of claim 24 further comprising:  
narrowing any portion of the sync, pseudo sync and/or AGC pulses.

Claim 46 (New). The method of claim 24 wherein the AGC pulses are shifted in position or are narrowed continuously or discretely to dynamically enable and disable the copy protection signals.

Claim 47 (New). The method of claim 24 wherein the position separation or gap between the sync or pseudo sync pulse and the respective AGC pulse is gap width modulated.

Claim 48 (New). The method of claim 24 wherein:  
the dynamic increasing and decreasing of the position separation comprises position and/or pulse width modulating the sync/pseudo sync and/or the AGC pulses; and  
amplitude modulating the position and/or pulse width modulated sync/pseudo sync and/or AGC pulses.

a<sup>2</sup>  
Claim 49 (New). A method of synthesizing copy protection signals in a video signal, employing sync and/or pseudo sync pulses followed by respective automatic gain control (AGC) pulses and/or raised back porch AGC pulses, comprising:

dynamically modulating at least one or a selected combination of a position, gap width, pulse width or amplitude of one or more of selected pulses of the sync, pseudo sync, AGC and/or raised back porch AGC pulses so as to synthesis the copy protection signals.

Claim 50 (New). The method of claim 49 further including selected raised back porch pulses, wherein the selected raised back porch pulses are position modulated or position delayed to assist in said synthesis.

Claim 51 (New). The method of claim 49 wherein only the AGC or raised back porch AGC pulses are position and/or pulse width modulated.

Claim 52 (New). The method of claim 49 wherein only the sync and/or pseudo sync pulses are position and/or pulse width modulated.

aa Claim 53 (New). A method of synthesizing copy protection signals in a video signal, employing sync, pseudo sync and respective automatic gain control (AGC) pulses, comprising:  
dynamically modulating the position, pulse width and/or gap width of the AGC pulses or of the sync/pseudo sync and respective AGC pulses, wherein a single AGC and/or pseudo sync pulse is modulated.

Claim 54 (New). The method of claim 53 wherein the modulating includes amplitude modulation.

Claim 55 (New). The method of claim 53 wherein any of a selected number and arrangement of AGC pulses are modulated to enable and disable the copy protection signal.

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